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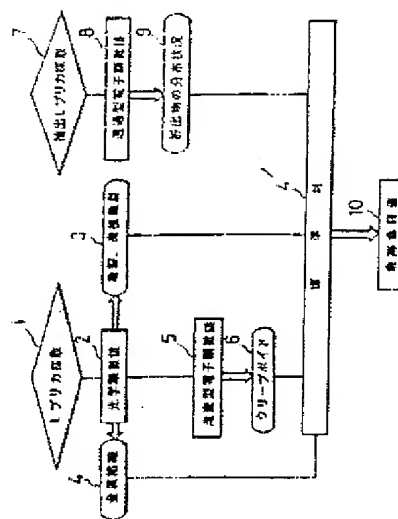
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TITLE : EVALUATION OF REMAINING LIFE OF
HEAT RESISTANT STEEL



ABSTRACT : PURPOSE: To evaluate remaining life of heat resistant steel used under a high pressure stress for a long time in a nondestructive manner and in a short time, by determining correlation characteristic between a defect distribution and residual life from uneven ness of heat resistant steel transferred onto a replica

CONSTITUTION: A replica 1 and an extraction replica 7 are sampled from the surface of heat resistant steel used under a high temperature stress. The, the replica 1 sampled is mounted on an optical microscope 2 to examine the presence of crackings and microscopic crackings 3 while degrading condition of a metal structure 4 is inspected and compared to a reference material 4' to judge a life zone of the heat resistant steel. Then, the replica is mounted on a scan type electron microscope 5 to examine the presence and distribution state of a creep void 6, which are compared to the refer ence material 5' to judge a life zone of the heat resistant steel. On the other hand, the extraction replica 7 sampled at the same position is mounted on a transmission type electron microscope 8 to examine a distribution state of deposit, which is com pared to the reference material 4' with life zone already clarified, made of the same materials the heat resistant steel, to judge the life zone of the heat resistant steel. Thus, remaining life of the heat resistant steel is evaluated 10 from the results of judging these life zones

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